PAST INLETS OF THE OUTER BANKS

Although six inlets currently occur north of Cape Lookout, numerous additional inlets have dissected the island chain episodically during historical times (post 1585 A.D.) (Stick, 1958; Fisher, 1962). The first map of northeastern North Carolina was made in 1590 and illustrates the occurrence of numerous inlets along the northern Outer Banks (Fig. 5). Studies have attempted to identify the location of paleo-inlets based upon historical maps (Stick, 1958; Payne, 1985), island geomorphology (Fisher, 1962; Riggs and Ames, in press; Ames and Riggs, in press) or stratigraphy, as derived from cores and geophysical data (Susman, 1975; Moslow and Heron, 1978; Herbert, 1978; Susman and Heron, 1979; Heron et al., 1984; Smith, 2004; Mallinson et al., 2005; Smith, 2006; Culver et al., 2006; Smith et al., in press). Such studies are significant in understanding island geomorphology and the processes of island formation and evolution.

Fisher (1962) attempted to recognize paleo-inlets along the Outer Banks by analyzing aerial photographs for the occurrence of geomorphologic features (i.e., the shape of the land surface) related to paleo-inlets. He also provided the positions and dates of known historic inlets (Fig. 6). Recent studies using modern geophysical techniques (Smith, 2006) have demonstrated that the inlets identified in Fisher's 1962 study represent only a fraction of the total number of inlet channels underlying the Outer Banks (Fig. 6).

Modern advances in geophysical technology, specifically ground penetrating radar (GPR) (Fig. 7), have allowed for rapid acquisition and interpretation of shallow subsurface data to define the geology beneath barrier islands (Fitzgerald

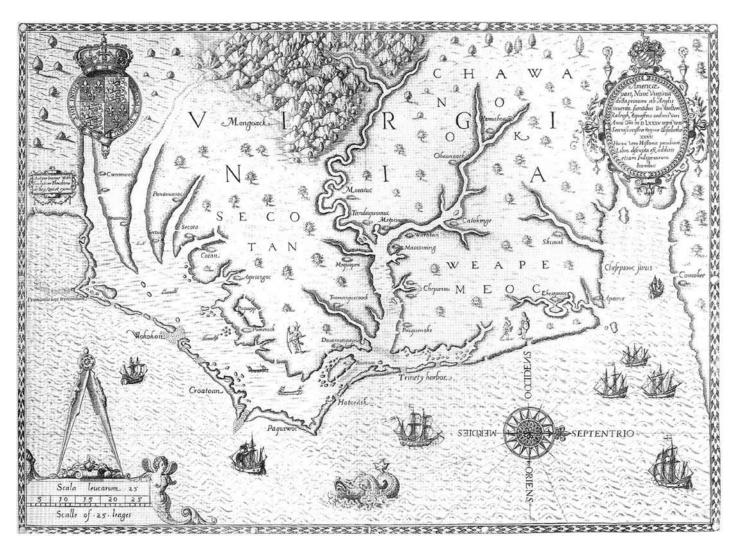


Figure 5. The White-deBry map was made in 1590 and shows the occurrence of numerous inlets along the NC coast.